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Emissions Trading In The United States: Using RGGI As A Model For Addressing Disproportionate Impacts Of Climate Change

Joshua Bleisch*

INTRODUCTION

The year 2017 witnessed one of the worst national disaster years on record both in the United States and across the world. Devastating hurricanes struck Texas, Florida, and Puerto Rico,¹ and wildfires burned 1.2 million acres in California.² Combined with widespread flooding in Southeast Asia and other incidents, it is estimated that the cost of these disasters is around \$330 billion globally.³ But more than just a year of particularly unforgiving natural disasters, 2017 is a prime example of how poorer communities are more severely affected by natural disasters and other effects of a changing climate. While it is impossible to attribute any one weather event to climate change, models predict that climate change will cause an increase both in the mean intensity of tropical cyclones as well as in the frequency of those high intensity storms.⁴

In Houston, Hurricane Harvey brought 48.20 inches of rain in some places.⁵ While flooding affected

* Executive Editor, *Indiana Journal of Law and Social Equality* Volume 7; Indiana University School of Law, J.D. 2019; Wabash College, B.A. 2016. I would like to thank the entire staff of the *Indiana Journal of Law and Social Equality* for their help with editing and cite-checking. Most of all, I would like to thank my wife, Morgan Raters Bleisch, for her enduring love and support.

¹ Hiroko Tabuchi, *2017 Set a Record for Losses from Natural Disasters. It Could Get Worse.*, N.Y. TIMES: CLIMATE (Jan. 4, 2018), https://www.nytimes.com/2018/01/04/climate/losses-natural-disasters-insurance.html?_r=0.

² Lauren Tierney, *The Grim Scope of 2017's California Wildfire Season is Now Clear. The Danger is Not Over.*, WASH. POST (Jan. 4, 2018), https://www.washingtonpost.com/graphics/2017/national/california-wildfires-comparison/?utm_term=.5434587d51b4.

³ See Tabuchi, *supra* note 1.

⁴ See Thomas R. Knutson, John L. McBride, Johnny Chan, Kerry Emanuel, Greg Holland, Chris Landsea, Isaac Held, James P. Kossin, A.K. Srivastava & Masato Sugi, *Tropical Cyclones and Climate Change*, 3 NATURE GEOSCIENCE 157, 160 (2010).

⁵ Tom Di Liberto, *Reviewing Hurricane Harvey's Catastrophic Rain and Flooding*, CLIMATE.GOV (Sept. 18, 2017), <https://www.climate.gov/news->

most of the city, not all areas felt the same impact. “Discriminatory housing policies have ‘restricted or, in some cases, confined poor people and people of color to less desirable areas when it comes to flooding and other kinds of land uses.’”⁶ More infrastructure spending in wealthier Houston neighborhoods,⁷ combined with a lack of flood insurance and disposable income among those living in poorer neighborhoods,⁸ led to Harvey having a disproportionate impact on the poor communities.

Puerto Rico tells a similar, if more harrowing, tale. Hurricane Maria struck on September 20, 2017, but reports on the number of deaths caused by the storm continue to vary widely.⁹ Until August 2018, the official death toll according to Puerto Rico’s Department of Public Safety was 64, but even then other researchers and media outlets estimated the actual figure could be over 1,000.¹⁰ By September 2018, that official estimate was revised to be 2,975.¹¹ In addition to the exceedingly high death toll, much of the island was without power for nearly a year after the storm hit.¹² The particular strength of Hurricane Maria is not solely to blame; rather, Puerto Rico is

features/event-tracker/reviewing-hurricane-harveys-catastrophic-rain-and-flooding.

⁶ Jeremy Deaton, *Hurricane Harvey Hit Low-Income Communities Hardest*, HUFFINGTON POST (Sept. 6, 2017) (quoting Robert Bullard), https://www.huffingtonpost.com/entry/hurricane-harvey-hit-low-income-communities-hardest_us_59b007ece4b0bef3378cdcba.

⁷ See Eleanor Krause & Richard V. Reeves, *Hurricanes Hit the Poor the Hardest*, BROOKINGS SOC. MOBILITY MEMOS (Sept. 18, 2017), <https://www.brookings.edu/blog/social-mobility-memos/2017/09/18/hurricanes-hit-the-poor-the-hardest/>.

⁸ See *id.*

⁹ See generally Alexis R. Santos-Lozada, *Why More Than 1,000 Deaths are Missing from Puerto Rico’s Official Death Toll*, PBS NEWSHOUR (Jan. 4, 2018), <https://www.pbs.org/newshour/science/heres-why-more-than-1000-deaths-are-missing-from-puerto-ricos-official-death-toll> (stating that death counts may be inaccurate so far and changing).

¹⁰ See *id.*

¹¹ Sheri Fink, *Nearly a Year after Hurricane Maria, Puerto Rico Revises Death Toll to 2,975*, N.Y. TIMES (Aug. 28, 2018), <https://www.nytimes.com/2018/08/28/us/puerto-rico-hurricane-maria-deaths.html>; see also Nishant Kishore, *Mortality in Puerto Rico After Hurricane Maria*, 379 NEW ENG. J. MED. 162 (2018).

¹² Alexia Fernández Campbell, *5 Things to Know About Puerto Rico 100 Days After Hurricane Maria*, VOX (Dec. 29, 2017), <https://www.vox.com/2017/12/23/16795342/puerto-rico-maria-christmas>; Dominique Mosbergen, *Power Was Final Restored to Almost All of Puerto Rico. Then Another Outage Struck.*, HUFFINGTON POST (Aug. 8, 2018) https://www.huffingtonpost.com/entry/puerto-rico-power_us_5b6a8bf1e4b0de86f4a6845c.

especially exposed to such disasters. “The high proportion of population living in areas vulnerable to natural hazards, growing numbers of the elderly and other at-risk groups, and a relatively high poverty rate (by U.S. if not Caribbean standards) increase the island’s social and economic vulnerability to climate change impacts.”¹³ Hurricane Maria struck an already vulnerable area of the world and demonstrated the devastating impacts that climate change can have on vulnerable populations.

Environmental justice has been a concern of activists for the past several decades.¹⁴ It has been well documented that, typically, poor and minority communities are most affected by hazardous pollutants and environmental degradation.¹⁵ While the environmental justice movement arose out of concern over the direct effects of harmful environmental pollutants, more recently scholars and activists have pointed to the fact that climate change also has more significant impacts for poor and minority communities,¹⁶ as is so intensely exemplified by the stories of Houston and Puerto Rico. This justice concern adds to the urgency with which we must act to significantly limit further greenhouse gas (GHG) emissions and work to adapt to a future where the effects of climate change are a reality.

¹³ LISAMARIE CARRUBA, JUAN A. CASTAÑER, RUPERTO CHAPARRO, WANDA L. CRESPO ACEVEDO, ERNESTO DIAZ, RAIMUNDO ESPINOZA, SOLEDAD GATZAMBIDE, KASEY R. JACOBS, ROBERTO MOYANO, VÍCTOR NIETO, SUSAN PACHECO, ANTARES RAMOS, PEDRO SANTA, RAÚL SANTIAGO SARTOLEMEI, RAUL SANTINI RIVERA, JOSE SEGUINOT BARBOSA & JOSE JUAN TERRASA, WORKING GROUP 3 REPORT CLIMATE CHANGE AND PUERTO RICO’S SOCIETY AND ECONOMY, *in* PUERTO RICO CLIMATE CHANGE COUNCIL, 256 (Kasey R. Jacobs & Ernesto L. Diaz eds., 2010).

¹⁴ Alan Ramo, *Environmental Justice as an Essential Tool in Environmental Review Statutes: A New Look at Federal Policies and Civil Rights Protections and California’s Recent Initiatives*, 19 HASTINGS W.-N.W. J. ENVTL. L. & POL’Y 41, 44 (2013) (“The doctrine of environmental justice originated in 1981 from a protest led by civil rights activist Reverend Benjamin Chavis against the siting of a polychlorinated biphenyl (‘PCB’) hazardous waste site in a community of color in North Carolina, during which Chavis first coined the term ‘environmental racism.’”).

¹⁵ *See id.*

¹⁶ *See* Maxine Burkett, *Just Solutions to Climate Change: A Climate Justice Proposal for a Domestic Clean Development Mechanism*, 56 BUFF. L. REV. 169, 177–81 (2008).

Despite the urgency, the U.S. government has not yet enacted any GHG mitigation legislation.¹⁷ The most recent effort, the Waxman-Markey climate bill, failed to pass the Senate in 2010 due to a lack of political support.¹⁸ Jurisdictions that have enacted mitigation legislation have mostly opted for emissions trading and offset schemes of various types.¹⁹ Internationally, attempts to establish emissions trading schemes under the Kyoto Protocol (the major global climate agreement adopted in 1997)²⁰ have seen varied, if not limited, success.²¹ For example, the Protocol's Clean Development Mechanism has led to only a small reduction in total annual CO₂ emissions²² and has proven to be highly susceptible to fraud.²³ Alternatively, the European Union's Emissions Trading System (ETS), Europe's Kyoto compliance regime, has been more successful in reducing CO₂ emissions while maintaining a market with some integrity.²⁴ Even still, as a non-ratifying party to the Kyoto Protocol, the United States is not involved in any international emissions trading scheme.²⁵

Even though the U.S. is not involved in climate change mitigation programs globally, there are some domestic efforts to reduce CO₂ emissions. In the northeast, the Regional Greenhouse Gas Initiative (RGGI)

¹⁷ See Raina Wagner, *Adapting Environmental Justice: In the Age of Climate Change, Environmental Justice Demands a Combined Adaptation-Mitigation Response*, 2 ARIZ. J. ENVTL. L. & POL'Y 153, 154 (2011).

¹⁸ *Id.*

¹⁹ See generally *Cap-and-Trade Program*, CAL. AIR RES. BD., <https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm> (last visited Dec. 6, 2017).

²⁰ Kyoto Protocol, United Nations Framework Convention on Climate Change (Dec. 11, 1997), http://unfccc.int/kyoto_protocol/items/2830.php (last visited Jan. 5, 2018).

²¹ See Michael Wara, *Is the Global Carbon Market Working?*, 445 NATURE 595, 595–96 (2007).

²² *Id.* at 595.

²³ Jacqueline M. Drew & Michael E. Drew, *Establishing Additionality: Fraud Vulnerabilities in the Clean Development Mechanism*, 23 ACCT. RES. J. 243, 245 (2010).

²⁴ DENNY ELLERMAN, CLAUDIO MARCANTONINI & ALESKANDAR ZAKLAN, *THE EU ETS: EIGHT YEARS AND COUNTING* 1 (2014).

²⁵ David Malakoff & Erin Marie Williams, *Q&A: An Examination of the Kyoto Protocol*, NPR (June 6, 2007), <https://www.npr.org/templates/story/story.php?storyId=5042766>; see also *Status of Ratification of the Kyoto Protocol*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php (last visited Sept. 28, 2017).

has been largely successful both in reducing GHG emissions in participatory states and in generating revenue and allocating the funds toward projects aimed at further reducing emissions.²⁶ The example set by RGGI demonstrates that a well-implemented GHG emissions trading scheme can not only reduce emissions, but also spur new development in clean energy and other greenhouse gas mitigation efforts.²⁷ While making investments in developing clean energy is a worthwhile goal, schemes like RGGI must ensure that the concerns of environmental justice communities are not overlooked. When assessing alternatives for the allocation of generated revenue, policymakers must turn their attention away from mitigation efforts and towards adaptation efforts for environmental justice communities.²⁸

This Note will proceed in three parts. Part I will provide a brief summary of the environmental justice movement, detailing how climate change is having a particular effect on environmental justice communities. Part II will discuss current efforts to limit greenhouse gas emissions in the United States. Specifically, it will look at RGGI and how its structure helps or fails to help environmental justice communities. Part III will propose a new scheme that is substantially similar to RGGI's trading approach, yet encourages increased investment in efforts to help environmental justice communities adapt to the harmful effects of climate change.

²⁶ See Alex Nussbaum, *Carbon-Trading Program Generates \$1.3 Billion in U.S. Northeast*, BLOOMBERG NEWS: BUSINESS (Jul. 13, 2015), <https://www.bloomberg.com/news/articles/2015-07-14/carbon-trading-program-generates-1-3-billion-in-u-s-northeast>.

²⁷ See David Roberts, *The Northeast US has a carbon-trading system. It is boosting, not hurting, state economies.*, VOX (Apr. 25, 2018), <https://www.vox.com/energy-and-environment/2018/4/25/17269544/fossil-fuel-carbon-trading-economies-rggi-northeast>.

²⁸ This Note will use the term "environmental justice communities" to refer generally to the poor and minority communities that are disproportionately affected by climate change.

I. CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE

A. *Definition and History of the Environmental Justice Movement and Federal Action Addressing Environmental Justice Concerns*

The environmental justice movement became a nationally salient issue in the early 1980s when a predominately African-American community objected to the placement of a hazardous waste landfill in their neighborhood.²⁹ By 1991, environmental justice advocates gathered in Washington, D.C. at the First National People of Color Environmental Leadership Summit.³⁰ At that summit, the delegates drafted and adopted seventeen *Principles of Environmental Justice*.³¹ Among other things, the *Principles* called for public policy that is based on “mutual respect and justice for all peoples,” for “universal protection from [environmentally harmful activities] that threaten the fundamental right to clean air, land, water, and food,” and that “all past and current producers [of toxins, hazardous wastes, and radioactive materials] be held strictly accountable to the people.”³²

The efforts of the environmental justice movement led to some modest federal action addressing its concerns. In 1991, President Bill Clinton issued an executive order requiring that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”³³ The order mandates that agencies develop a strategy “that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”³⁴ However, it should be noted that the order

²⁹ See Alice Kaswan, *Environmental Justice: Bridging the Gap Between Environmental Laws and “Justice”*, 47 AM. U. L. REV. 221, 226 (1997).

³⁰ *Principles of Environmental Justice*, EJNET.ORG, <http://www.ejnet.org/ej/principles.html> (last visited Sept. 29, 2017).

³¹ *Id.*

³² *Id.*

³³ Exec. Order No. 12898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

³⁴ *Id.* at 7630.

creates no private right of action. Rather, it is only enforceable by executive branch authority against its own agencies.³⁵ Attempts to pass federal laws to address environmental justice concerns have not been successful for want of political support.³⁶

While there has been no legislative success in addressing environmental justice concerns, EPA has responded. It defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”³⁷ EPA also created the Office of Environmental Justice³⁸ and provides grants to fund projects that help communities’ environmental or public health issues.³⁹

B. Environmental Justice in the Climate Change Context

The environmental justice movement began due to issues of hazardous pollution and its direct effects on vulnerable communities, as is evidenced in the *Principles of Environmental Justice*.⁴⁰ The Principles call for “protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons” and that “that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.”⁴¹ However, the same principles that were developed in response to the disproportionate effects of hazardous pollution can apply to addressing the issues caused by climate change. As with hazardous pollution, policymakers working on issues of climate change should act with “mutual respect and justice for all peoples,”⁴² and attempt to protect especially vulnerable populations from the hazards created by climate change.

³⁵ *Id.* at 7632–33.

³⁶ See Kaswan, *supra* note 29, at 246–47.

³⁷ *Environmental Justice*, EPA.GOV,

<https://www.epa.gov/environmentaljustice> (last visited Sep. 29, 2017).

³⁸ See Wagner, *supra* note 17, at 158.

³⁹ *Environmental Justice Grants and Resources*, EPA.GOV,

<https://www.epa.gov/environmentaljustice/environmental-justice-grants-and-resources> (last visited Sep. 29, 2017).

⁴⁰ See *Principles of Environmental Justice*, *supra* note 30.

⁴¹ *Id.*

⁴² *Id.*

Climate change is already having more severe effects on poorer communities, both around the world and within the United States.

Around the world, the countries that are least responsible for climate change from greenhouse gas emissions are often more vulnerable to its effects, and vice versa. One study found that 20 of the 36 highest greenhouse gas emitting countries were among the least vulnerable to negative impacts of climate change, while 11 of the 17 countries with low greenhouse gas emissions were “acutely vulnerable” to the negative impacts of climate change.⁴³ Most of the countries that bear a disproportionate burden of climate change are island countries in the Atlantic, Pacific, and Indian Oceans, as well as African countries.⁴⁴

Bangladesh is a prime example of inequity in the distribution of climate change burdens. It is responsible for only 0.3% of global GHG emissions.⁴⁵ However, due to rising sea levels, Bangladesh’s climate scientists predict that by 2050, 17% of Bangladesh’s land will be flooded, displacing 18 million people.⁴⁶ Already, people have been forced to move from villages along the Bay of Bengal due to rising tides.⁴⁷ And in recent years, riverbank erosion from melting snowpack and glaciers in the Himalayas has displaced between 50,000 and 200,000 people annually.⁴⁸

Even though the United States is one of the largest GHG emitters, relative to the rest of the world, it will bear less of the burden of climate change.⁴⁹ That said, climate change and its effects still pose a serious threat to people within the United States. The uneven distribution of the responsibility for the effects of climate change is

⁴³ Glenn Althor, James E.M. Watson & Richard A. Fuller, *Global Mismatch Between Greenhouse Gas Emissions and the Burden of Climate Change*, 6 NATURE SCI. REP. 20281 (2016).

⁴⁴ *Id.* at 2.

⁴⁵ Gardiner Harris, *Borrowed Time on Disappearing Land*, N.Y. TIMES: ASIA PACIFIC (March 28, 2014), <https://www.nytimes.com/2014/03/29/world/asia/facing-rising-seas-bangladesh-confronts-the-consequences-of-climate-change.html?mcubz=0>.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Robert Glennon, *The Unfolding Tragedy of Climate Change in Bangladesh*, SCI. AM. (April 21, 2017), <https://blogs.scientificamerican.com/guest-blog/the-unfolding-tragedy-of-climate-change-in-bangladesh/>.

⁴⁹ WILLIAM D. NORDHAUS & JOSEPH BOYER, WARMING THE WORLD: ECONOMIC MODELS OF GLOBAL WARMING 91 (2014).

seen at the national level just as it is globally. For example, African-Americans emit 20% less greenhouse gases than non-Hispanic whites per capita.⁵⁰ Yet, African-Americans die of health issues from extreme heat at a rate 150–200% greater than non-Hispanic whites.⁵¹

As seen in the examples of Houston and Puerto Rico above, climate change may also affect particular populations due to their positioning within a metropolitan area. New Orleans is another prominent example of this phenomenon: “[t]he area most vulnerable to floods, the Lower Ninth Ward, was ninety-eight percent black.”⁵² That fact exacerbated the devastation of Hurricane Katrina for this demographic, while other groups were not so severely affected.⁵³ Similarly, in New York, the city’s poorest residents were deliberately placed in the most exposed areas along the coastline.⁵⁴ For example, the Rockaways in southern Queens contained more than half of Queens’s public housing even though a tiny portion of its total population lived there.⁵⁵ Says Professor Burkett, “the legacy of slavery, segregation, the placement of reservations for indigenous populations, and the more elusive systematic discrimination that has followed, for example, is now locking in differentiated experiences of a warming planet.”⁵⁶

This Note operates under the assumption that global mean temperature will be held to a moderate increase of approximately 3°C.⁵⁷ Under those conditions, the impacts of climate change are more easily modeled and predicted. It does not consider the low-probability, extreme-impact outcomes that may come with greater

⁵⁰ J. ANDREW HOERNER & NIA ROBINSON, *A CLIMATE OF CHANGE: AFRICAN AMERICANS, GLOBAL WARMING, AND A JUST CLIMATE POLICY FOR THE U.S.*, ENVIRONMENTAL JUSTICE AND CLIMATE CHANGE INITIATIVE 1 (2008).

⁵¹ *Id.* at 2.

⁵² Burkett, *supra* note 16, at 185.

⁵³ *Id.* at 185–86.

⁵⁴ Jonathan Mahler, *How the Coastline Became a Place to Put the Poor*, N.Y. TIMES: N.Y. / REGION (Dec. 3, 2012), <http://www.nytimes.com/2012/12/04/nyregion/how-new-york-citys-coastline-became-home-to-the-poor.html?mcubz=0>.

⁵⁵ *Id.*

⁵⁶ Burkett, *supra* note 16, at 187–88.

⁵⁷ See M. Latif, *Uncertainty in Climate Change Projections*, 111 J. GEOCHEMICAL EXPLORATION 1, 3 (2011).

increases in global mean temperature,⁵⁸ due to its highly unpredictable nature. Since the effects of moderate climate change are more easily predicted, it is more useful for contemplating various policy solutions.

II. RGGI AND ITS EFFECTS ON LOW-INCOME COMMUNITIES

The Regional Greenhouse Gas Initiative (RGGI) is a collective effort of nine Northeastern and Mid-Atlantic states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) to cap and reduce CO₂ emissions from the power sector.⁵⁹ New Jersey participated from 2009–2011 and then withdrew; the legislature has since voted to rejoin, and under a new administration the state is poised to do so.⁶⁰ Virginia also may join RGGI in the near future.⁶¹ Each RGGI state establishes its own statutes or regulations to form Budget Trading Programs based on the RGGI Model Rule, and together each state's programs comprise a regional cap and allowance trading market.⁶²

The Budget Trading Programs regulate fossil-fuel fired power plants in RGGI states with a capacity of 25 megawatts or greater.⁶³ Since 2009, regulated entities are required to possess CO₂ allowances equal to their CO₂ emissions over a three-year control period.⁶⁴ The allowances are distributed almost entirely by quarterly

⁵⁸ See generally Martin L. Weitzman, *Fat-Tailed Uncertainty in the Economics of Catastrophic Climate Change*, 5 REV. ENV'TL. ECON. & POL'Y 275 (2011).

⁵⁹ Welcome, REGIONAL GREENHOUSE GAS INITIATIVE, <https://www.rggi.org/> (last visited Sept. 30, 2017).

⁶⁰ Tom Johnson, *Lawmakers Hope to Steer State Back Into Regional Greenhouse Gas Initiative*, NJ SPOTLIGHT (May 23, 2017), <http://www.njspotlight.com/stories/17/05/22/lawmakers-hope-to-steer-state-back-into-regional-greenhouse-gas-initiative/>.

⁶¹ Robert Walton, *With Proposal to Join RGGI, Virginia Would Be First Southern State to Cap Carbon*, UTILITY DIVE (Jan. 10, 2018), <https://www.utilitydive.com/news/with-proposal-to-join-rggi-virginia-would-be-first-southern-state-to-cap-c/514537/>.

⁶² *State Statutes & Regulations*, REGIONAL GREENHOUSE GAS INITIATIVE, <https://rggi.org/design/regulations/> (last visited Sept. 30, 2017).

⁶³ *Elements of RGGI*, REGIONAL GREENHOUSE GAS INITIATIVE, https://www.rggi.org/design/overview/regulated_sources (last visited Sept. 30, 2017).

⁶⁴ *Id.*

regional auction.⁶⁵ Proceeds from the auctions are then reinvested by the RGGI states in strategic energy and consumer programs.⁶⁶ Through September 2016, the allowance auctions have raised \$2.58 billion for reinvestment.⁶⁷ RGGI auction proceeds were invested in programs including energy efficiency, clean and renewable energy, greenhouse gas abatement, and direct bill assistance.⁶⁸ Energy efficiency and clean and renewable energy continued to receive the largest share of investments.⁶⁹

It is the reinvestment of funds from the auctions that are the primary focus of this Note, rather than the reduction in carbon emissions. However, it is worth noting that the RGGI states have seen a 50% reduction in carbon emissions from the power sector since 2005.⁷⁰ This shows that the scheme's main objective of reducing regional carbon emissions from power plants has been largely successful. However, that is only half of the story. The proceeds raised through the allowance auctions have great opportunity to help manage the problems caused by carbon emissions—problems that are happening now.

States' investment of RGGI proceeds are focused on mitigation efforts. Specifically, energy efficiency programs represent a large majority of RGGI reinvestments.⁷¹ Cumulatively, 58% of RGGI reinvestment dollars went to energy efficiency programs between 2008 and 2016.⁷² Only Maryland does not direct a majority of RGGI proceeds toward energy efficiency programs.⁷³ Other categories include clean and renewable energy programs, which account for 14% of cumulative RGGI reinvestment, and GHG abatement, which also represents 14%.⁷⁴ Projects like this are important and can help to avoid the release of millions of tons of CO₂. However, there are still

⁶⁵ *Investment of Proceeds*, REGIONAL GREENHOUSE GAS INITIATIVE, https://www.rggi.org/rggi_benefits (last visited Sept. 30, 2017).

⁶⁶ *Id.*

⁶⁷ RGGI, *THE INVESTMENT OF RGGI PROCEEDS THROUGH 2014*, 4 (2016).

⁶⁸ *Id.* at 5.

⁶⁹ *Id.* at 5, 7.

⁷⁰ RGGI, *THE INVESTMENT OF RGGI PROCEEDS IN 2016*, 4 (2018).

⁷¹ *Id.* at 12.

⁷² *Id.*

⁷³ *Id.* at 24.

⁷⁴ *Id.* at 12.

environmental justice concerns, even for clean and renewable energy.⁷⁵

Energy efficiency programs allow all consumers of electricity to benefit from savings. According to RGGI, the states' energy efficiency investments made from 2008 through 2014 are expected to save \$3.62 billion over the lifetime of the measures, and the programs benefit 960,000 households and 20,800 businesses.⁷⁶ Clean and renewable energy investments are also expected to offset \$836.1 million in energy expenses over the lifetime of the measures, benefiting 1.1 million households and 600 businesses.⁷⁷ For the low-income communities most severely affected by carbon pollution (hereinafter climate justice communities), energy efficiency programs can help offset increased utilities costs that accompany large swings in temperature. For example, in Delaware, 10% of RGGI allowance proceeds are directed to a program which provides upgrades at no cost to improve energy efficiency.⁷⁸ And in Maryland, RGGI proceeds "supported energy efficiency upgrades at 14,380 low- to moderate-income households."⁷⁹

Both energy efficiency and clean and renewable energy programs require labor to install, which create jobs and stimulates local economies.⁸⁰ These programs, paired with job training also funded by RGGI reinvestment,⁸¹ can help to provide opportunity to environmental justice communities. But jobs themselves do not help vulnerable populations adapt to increased temperatures, rising sea levels, erosion, and flooding that are already occurring as a result of climate change. Further investment in climate change adaptation measures will be necessary to help environmental justice communities adjust to those realities.

⁷⁵ See generally Jeanne Marie Zokovitch Paben, *Green Power & Environmental Justice—Does Green Discriminate?*, 46 TEX. TECH L. REV. 1067 (2014).

⁷⁶ RGGI, *supra* note 67, at 9.

⁷⁷ *Id.* at 11.

⁷⁸ RGGI, *supra* note 70 at 18.

⁷⁹ RGGI, *supra* note 67 at 24.

⁸⁰ *Id.* at 9, 11.

⁸¹ *Id.* at 10. (RGGI reports that between 2009 and 2014 7,200 workers have been trained with RGGI investments).

III. A RGGI-LIKE NATIONAL TRADING SCHEME THAT HELPS ENVIRONMENTAL JUSTICE COMMUNITIES ADAPT TO THE HARMFUL EFFECTS OF CLIMATE CHANGE

The Regional Greenhouse Gas Initiative provides a useful model for seeking to address national climate policy and the effects felt by climate justice communities. The common law tort system in the United States has failed to adequately address the unique problem created by climate change, leaving those most responsible for the damage off the hook for its costs. In the face of that failure, revenue-generating emissions trading schemes like RGGI could help to more evenly distribute the costs of damages from climate change. Despite the fact that the current political climate appears fairly adverse to pursuing new climate policy, a scheme such as this is more feasible than it seems at first blush.

A. The Tort System's Failure to Adequately Distribute the Costs of Damages from Climate Change

One of the fundamental goals of the tort system is distributive justice.⁸² The distributive justice view “ascribes to law the role of the fair allocation of the costs of accidents according to some measure of merit and the redistributing benefits from the stronger and wealthier segments of society to those who are in need.”⁸³ In the climate change context, the costs are not well distributed based on merit, because it is so hard to assign blame to specific emitters of GHGs for damage from climate change that occurs throughout the world.⁸⁴

The inherent difficulty in using the tort system to recover damages caused by climate change are exemplified in the few cases to address the issue. In those

⁸² Benjamin Shmueli, *Legal Pluralism in Tort Law Theory: Balancing Instrumental Theories and Corrective Justice*, 48 U. MICH. J. L. REFORM 745 (2015).

⁸³ *Id.* at 753.

⁸⁴ See Althor et al., *supra* note 43, at 1 (“[B]y polluting the Earth’s atmosphere with GHG emissions through fossil fuel combustion, deforestation and agricultural activities, emitting countries are degrading the world’s climate system, a common resource shared by all biodiversity, including people.”).

cases, courts have been unwilling to allow plaintiffs to recover in such situations. One example is the Ninth Circuit case *Native Village of Kivalina v. Exxon Mobil, Corp.*⁸⁵ In that case, an Alaskan Native tribe residing in a village located at the end of a barrier reef island north of the Arctic Circle faced the need to relocate due to severe erosion of its island.⁸⁶ The erosion was caused by an increasing lack of sea ice that protected the village from severe storms.⁸⁷ It was so extensive that the Army Corps of Engineers predicted that the entire island will be inundated by 2025.⁸⁸

The village sued several oil and power companies under a public nuisance theory, alleging that they contributed to the climate change which caused their injuries.⁸⁹ The Ninth Circuit held that Congress's action addressing GHG emissions had displaced any federal common law public nuisance and injunctive relief actions.⁹⁰ Because the Supreme Court in *Massachusetts v. EPA*⁹¹ found that Congress had empowered EPA to regulate GHGs, the Ninth Circuit found that congressional action to be displacing.⁹² Ultimately, the Ninth Circuit was unwilling to use the federal common law to solve Kivalina's dire circumstance, saying that it was a job for the legislative and executive branches instead.⁹³

Another case from the same year indicated the Supreme Court's preference for addressing climate change through the executive branch rather than allowing for a separate common law route through the courts.⁹⁴ In *American Electric Power v. Connecticut*, the Court writes that the Clean Air Act "provides a means to seek limits on emissions of carbon dioxide from domestic power plants—the same relief the plaintiffs seek by invoking federal

⁸⁵ 696 F.3d 849 (9th Cir. 2011).

⁸⁶ *Id.* at 853.

⁸⁷ *Id.*

⁸⁸ Stephen Sackur, *The Alaskan Village Set to Disappear Under Water in a Decade*, BBC NEWS (July 30, 2013), <http://www.bbc.com/news/magazine-23346370>.

⁸⁹ *Kivalina*, 696 F.3d at 854.

⁹⁰ *Id.* at 858.

⁹¹ 549 U.S. 497 (2007).

⁹² *Kivalina*, 696 F.3d at 857.

⁹³ *Id.* at 858.

⁹⁴ *See Am. Elec. Power Co., v. Connecticut*, 564 U.S. 410, 425 (2011).

common law. We see no room for a parallel track.”⁹⁵ Again, due to the existence of a legislative and regulatory approach for addressing damage from GHG emissions, courts feel that opening up tort law to such claims is inappropriate.

Even if courts were willing to hear common law challenges for damages from climate change, those challenges would still be quite difficult to bring. Just navigating the issues of joint and several liability and venue, given the enormous number of potential defendants, could easily become unmanageable.⁹⁶ Additionally, it would be incredibly difficult for a plaintiff to meet the elements of negligence in the climate change context, particularly that the alleged harm was proximately caused by the defendant’s actions.⁹⁷ Between the issue of congressional displacement and the difficulty of proving the elements of negligence, using the tort system is not an adequate strategy for allocating the burdens of climate change.

B. A National RGGI-like Program’s Improved Allocation of the Burdens of Climate Change and Reduction Total Emissions

Since the courts have made it clear that only a statutory or regulatory solution to climate damages will be accepted, a national RGGI-like emissions trading program where proceeds will help allocate the burdens of climate change becomes all the more desirable. Proceeds from allowance allocations could be invested in communities that have been harmed by climate change but have no route in the courts to recover those damages.

Like RGGI, this scheme would begin by holding an auction at which emissions allowances may be purchased by carbon emitters. This generates revenue that may be reinvested by the government, as opposed to other schemes where allowances are distributed directly to polluters based upon historical emissions.⁹⁸ Also like

⁹⁵ *Id.*

⁹⁶ See Michael B. Gerrard, *What Litigation of a Climate Nuisance Suit Might Look Like*, 12 SUSTAINABLE DEV. L. & POL’Y 12, 14 (2012).

⁹⁷ Maxine Burkett, *Litigating Climate Change Adaptation: Theory, Practice, and Corrective (Climate) Justice*, 42 ELR ENVTL. L. REP. 11144, 11145 (2012).

⁹⁸ See generally *Phases 1 and 2 (2005–2012)*, EUR. COMMISSION, https://ec.europa.eu/clima/policies/ets/pre2013_en (last visited Jan. 4, 2018).

RGGI, emitting entities would be required to obtain a number of allowances equal to the total carbon emissions they will release over some compliance period. Then, a cap on the total number of allowances allocated could be set and periodically lowered in order to force the reduction of GHG emissions. While reducing GHG emissions is an important aspect, this Note is focused on the auction proceeds and how they would be allocated.

This scheme would differ from RGGI in that the proceeds would be specifically earmarked for investment in projects designed to benefit climate justice communities who bear the brunt of climate change yet have no means for recovering those costs. This is similar to California's carbon market which set aside 26% of its proceeds for climate justice communities in 2014.⁹⁹ The auction acts essentially as a tax, placing a higher price on carbon and generating revenue for reinvestment. For example, proceeds could be used to help protect or relocate coastal and low-lying communities in the face of rising sea levels.¹⁰⁰ The proceeds could be used in the form of grants to help those who live in at-risk areas cover the costs of moving. Alternatively, they could be used to construct barriers or other infrastructure to protect against rising tides.

Another possible use for auction proceeds would be investment in better infrastructure for urban communities where mortality rates for heat-related conditions in people of color are disproportionately high.¹⁰¹ The proceeds could be used to improve urban planning by planting more trees or other vegetation and constructing green spaces, ponds, or moving water.¹⁰² They could also be used to help cities or non-profits provide designated "cooling centers" during times of extreme heat.¹⁰³ This would help combat the increased

⁹⁹ Amy Nordrum, *Calif. Earmarks a Quarter of Its Cap-and-Trade Riches for Environmental Justice*, INSIDE CLIMATE NEWS (June 25, 2014), <https://insideclimatenews.org/news/20140625/calif-earmarks-quarter-its-cap-and-trade-riches-environmental-justice>.

¹⁰⁰ *See, e.g.*, *Native Vill. Of Kivalina v. Exxon Mobil, Corp.*, 696 F.3d 849 (9th Cir. 2011).

¹⁰¹ *See, e.g.*, HOERNER & ROBINSON, *supra* note 50, at 2.

¹⁰² *See* WORLD HEALTH ORG., REG'L OFFICE FOR EUR., PUBLIC HEALTH ADVICE ON PREVENTING HEALTH EFFECTS OF HEAT 27 (2011).

¹⁰³ Such as ones used by San Francisco during a heat wave in September 2017. *See* Rachel Swan, *3 Deaths in SF Likely Caused by Weekend Heat*

mortality and other negative effects on public health, especially among climate justice communities, that come along with extreme heat.

Lastly, auction proceeds could be used to establish a fund to help communities rebuild after natural disasters like wildfires, floods, and hurricanes which will be more frequent and more powerful due to climate change.¹⁰⁴ To this end, they could be used simply as an additional funding source for the Federal Emergency Management Agency's (FEMA) public assistance¹⁰⁵ and individual assistance¹⁰⁶ programs. Those programs provide grants to state, local, and tribal governments and certain nonprofit organizations or individuals to assist with recovery after some disaster event.¹⁰⁷ By increasing the revenue going to those FEMA programs with proceeds acquired from major GHG emitters, this RGGI-like national emissions trading scheme will more equitably distribute the costs of climate change and its accompanying increase in extreme weather.

C. The Political Feasibility of A National Emissions Trading Scheme in the RGGI Model

Even though the Trump Administration has made it clear that it has no desire to pursue regulation of GHGs,¹⁰⁸ the private sector is increasingly concerned with how climate change will affect bottom lines. Additionally, several government agencies including the State Department and Department of Defense are concerned with how climate change will impact geopolitical stability. This shows that there may be a path to success for such a

Wave, SF GATE (Sept. 6, 2017, 10:38 PM), <http://www.sfgate.com/bayarea/article/3-deaths-in-SF-likely-caused-by-weekend-heat-wave-12178945.php>.

¹⁰⁴ See generally Willie Drye, *2017 Hurricane Season Was the Most Expensive in U.S. History*, NAT'L GEOGRAPHIC (Nov. 30, 2017), <https://news.nationalgeographic.com/2017/11/2017-hurricane-season-most-expensive-us-history-spd/>.

¹⁰⁵ *Public Assistance: Local, State, Tribal and Private Non-Profit*, FEMA, <https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit> (last visited Jan. 5, 2017).

¹⁰⁶ *Individual Disaster Assistance*, FEMA, <https://www.fema.gov/individual-disaster-assistance> (last visited Jan. 5, 2017).

¹⁰⁷ *Public Assistance*, *supra* note 104.

¹⁰⁸ See 82 Fed. Reg. 48035 (Oct. 16, 2017).

scheme through more business-minded and neoconservative lawmakers.

Moody's, a bond rating agency, issued a notice to its clients about how it would be incorporating climate change concerns into its credit ratings for state and local bonds.¹⁰⁹ It stated that "[t]he growing effects of climate change, including climbing global temperatures, and rising sea levels, are forecast to have an increasing economic impact on U.S. state and local issuers. This will be a growing negative credit factor for issuers without sufficient adaptation and mitigation strategies."¹¹⁰ This sends the message to state and local governments that failing to account for climate change adaptation will have negative impacts on their finances. Because organizations like Moody's are taking climate change's threats as a serious risk to finance, fiscally-minded lawmakers may be inclined to follow suit.

Companies also see climate change as a direct threat to the way they do business.¹¹¹ Many large multinational corporations disagreed with President Trump's announcement that he intended to withdraw the United States from the Paris Agreement.¹¹² Climate change will also significantly affect the insurance industry, as more and more claims relating to its effects are made. For example, an industry study found that 2016 had 750 major "loss events," compared to the 10-year annual average of 590.¹¹³ Furthermore, "[a]nalytics firm CoreLogic has found that 6.9 million homes along the Atlantic and Gulf coasts are at risk of damage from hurricane storm surge that could cost more than \$1.5

¹⁰⁹ Christopher Flavelle, *Moody's Warns Cities to Address Climate Risks or Face Downgrades*, BLOOMBERG NEWS (Nov. 29, 2017), <https://www.bloomberg.com/news/articles/2017-11-29/moody-s-warns-cities-to-address-climate-risks-or-face-downgrades>.

¹¹⁰ MOODY'S INVESTOR INV'R SERV., *Announcement: Moody's: Climate change is forecast to heighten US exposure to economic loss placing short- and long-term credit pressure on US states and local governments* (Nov. 28, 2017).

¹¹¹ See Daniel Victor, *'Climate Change Is Real': Many U.S. Companies Lament Paris Accord Exit*, N.Y. TIMES (June 1, 2017), <https://www.nytimes.com/2017/06/01/business/climate-change-tesla-corporations-paris-accord.html>.

¹¹² *Id.*

¹¹³ Beth Kowitt, *Climate Change is About to Remake the Insurance Industry*, FORTUNE (July 25, 2017), <http://fortune.com/2017/07/25/climate-change-insurance-industry/>.

trillion.”¹¹⁴ Lawmakers concerned with promoting American business will likely be persuaded that action on GHG emissions is necessary when seen from the private sector’s perspective.

In addition to the private sector, several important parts of the federal government view climate change as a potential threat and harmful to U.S. interests. The State Department, at least in the past, has recognized climate change as a threat to global order.¹¹⁵ At the time of this Note’s publication, the State Department still has a webpage for the Office of Global Change.¹¹⁶ According to that page, the purpose of that office is to “[implement] and [manage] U.S. international policy on climate change, and [represent] the United States in negotiations under the United Nations Framework Convention on Climate Change.”¹¹⁷ Under the Obama administration, Secretary of State John Kerry made climate change a top foreign policy priority.¹¹⁸ However, the Trump Administration recently removed climate change from the list of worldwide threats to the United States.¹¹⁹

The U.S. Military views climate change as a threat to national security. Secretary of Defense Jim Mattis stated in Senate testimony that “Climate change is impacting stability in areas of the world where our troops are operating today.”¹²⁰ He also said that it is important for military commanders to incorporate drivers of instability like climate change into their planning.¹²¹ In addition to that testimony, in 2014 the Department of Defense (DOD) issued its *Quadrennial Defense Review*,

¹¹⁴ *Id.*

¹¹⁵ See Pam Radtke Russell, *Administration, Democrats Frame Climate Change as a National Security Threat*, CQ ROLL CALL (Mar. 11, 2014), 2014 WL 930866.

¹¹⁶ *Office of Global Change*, U.S. DEP’T OF STATE, <https://www.state.gov/e/oes/climate/> (last visited Oct. 1, 2018).

¹¹⁷ *Id.*

¹¹⁸ Russell, *supra* note 116.

¹¹⁹ Jill Colvin, *Under Trump, Climate Change Not a National Security Threat*, ASSOCIATED PRESS (Dec. 19, 2017), <https://www.apnews.com/fe6a15e5d16a40718ad4d80ef22a8864/Under-Trump,-climate-change-not-a-national-security-threat>.

¹²⁰ Andrew Revkin, *Trump’s Defense Secretary Cites Climate Change as National Security Challenge*, PROPUBLICA (Mar. 14, 2017, 11:17 AM), <https://www.propublica.org/article/trumps-defense-secretary-cites-climate-change-national-security-challenge>.

¹²¹ *Id.*

which discussed the national security concerns raised by climate change. In it, the DOD writes:

The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world. These effects are threat multipliers that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions – conditions that can enable terrorist activity and other forms of violence.¹²²

At the time this report was released, the DOD was led by Chuck Hagel, a former Republican Senator from Nebraska, and Barack Obama was Commander-in-Chief. When it comes to issues of national security, both Democrats and Republicans can agree on taking a course that seeks to ensure that security.

Despite the purging of information about climate change from other government websites,¹²³ Mattis's statements and the *Quadrennial Defense Review* show that the Pentagon understands the real implications that climate change caused destabilization may have on national security.¹²⁴ This may be convincing information for more hawkish lawmakers who are concerned with institutional stability and military readiness. The same destabilizing effects of climate change cited by the DOD are possible within the United States as well as abroad. A national RGGI-like emissions trading scheme which invests money into environmental justice communities will reduce GHG emissions while helping to moderate climate change's destabilizing effects by more evenly distributing its costs. If a public policy that reduces greenhouse gasses and promotes stability both at home

¹²² U.S. DEP'T OF DEF., QUADRENNIAL DEFENSE REVIEW 2014, at 8 (2014).

¹²³ See e.g., Chelsea Harvey, *Reports on Climate Change Have Disappeared from the State Department Website*, WASH. POST (Jan. 26, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/01/26/reports-on-climate-change-have-disappeared-from-the-state-department-website/?utm_term=.b4e1084cda20; Lisa Friedman, *EPA Scrubs a Climate Website of 'Climate Change'*, N.Y. TIMES (Oct. 20, 2017), https://www.nytimes.com/2017/10/20/climate/epa-climate-change.html?_r=0.

¹²⁴ Revkin, *supra* note 120.

and abroad is framed in terms of national security, those hawkish lawmakers may be persuaded into supporting it.

CONCLUSION

Climate change is happening, and its effects are being seen across the world. Sadly, its effects have, and will continue to have, a disparate impact on poor populations both in the United States and globally. One of the central tenets of environmental justice is to design public policy based on justice for all people. As policymakers design programs to reduce GHGs and seek to invest in new developments, they must keep in mind the communities that have borne and will continue to bear the harshest effects of climate change. A national, RGGI-like emissions trading scheme would help by generating revenue, which can be used to help environmental justice communities recover from the effects of climate change. Such a scheme would be politically feasible if the right points are stressed. Because the federal common law is closed to climate torts and a policy solution is required, such a scheme would be an important step in filling that gap.